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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,396	03/12/2004	Young-Joon Rhee	AB-1355 US	7324
32605 7590 07/16/2008 MACPHERSON KWOK CHEN & HEID LLP 2033 GATEWAY PLACE SUITE 400 SAN JOSE, CA 95110				
EXAMINER				
CHEN, LUCY P				
ART UNIT		PAPER NUMBER		
2871				
MAIL DATE		DELIVERY MODE		
07/16/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/799,396

Applicant(s)

RHEE ET AL.

Examiner

LUCY P. CHIEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/24/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-7, 10, 16-20, 29, 30, 32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-7, 10, 16-20, 29, 30, 32 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/30/2008
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/24/2008 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4, 16, 29, 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 discloses "...wherein the pixel electrodes formed on the blue filter and transparent filter have a smaller area than the pixel electrodes formed on the red or green filters." Does applicant mean pixel areas? or the pixel electrodes that are being connected to the data lines? Examiner will assume applicant means the area of each of the blue and white pixels.

Claim 4 discloses a second pixel electrodes which is not disclosed in Claim 1.

Claim 29 discloses a first pixel electrodes which is not disclosed in Claim 1.

Claim 30 discloses a first and second pixel electrode which is not disclosed in Claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1,4,32,33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka et al (US 6016178) in view of Morozumi (Re 33882)

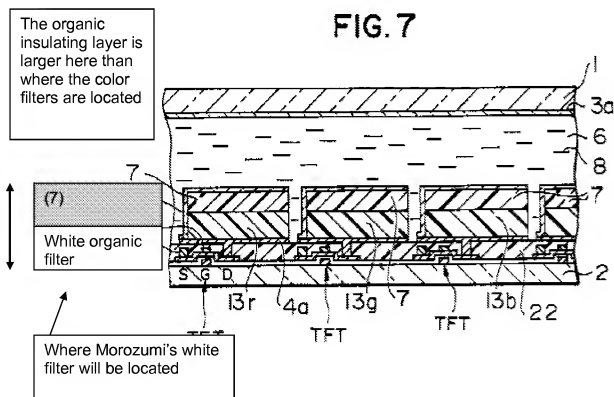
Kataoka et al discloses (Figure 7) an insulating substrate (2), a plurality of thin film transistors (TFT) formed on the substrate (2). A plurality of three primary color filters (13r,13g,13b) formed on the thin film transistor (TFT); a plurality of pixel electrodes (4b on top of 13r, 4b on top of 13g, 4b on top of 13b) formed on each of the color filters (13r,13g,13b) and connected to the thin film transistors (TFT) to complete a liquid crystal display with color filters; and a single layer structured organic insulating layer (7 is made of a polymer which is organic) including a plurality of first portions (7) disposed between the color filters (13r,13g,13b) and the pixel electrode (4b). A third organic insulating portion (22) that connects the first and second portion.

Kataoka et al does not disclose the second portion of the organic insulating layer disposed on the transparent areas.

Morozumi discloses (Fig. 16) (column 10, row 48-60) the second portion of the organic insulating layer disposed on the transparent areas (white color filter).

When adding Morozumi's white filter (which is an organic insulating layer also) to Kataoka et al's display (Fig. 7) it will be manufactured the same and thus the organic insulating layer (7) including a plurality of first portions disposed between the color filter (13r,13g,13b) and the first pixel electrode (4b) and a plurality of second portions (which is Morozumi's white organic insulating filter and the insulating layer (7) of Kataoka et al under the second pixel electrodes has a thickness larger than the first portions (7 shown above 13r,13g,13b)

It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Kataoka et al's color display device to include Morozumi's white filter and second pixel electrode to improve the overall brightness of the display (Column 10, Rows 54-60).



Claim 3,6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka et al (US 6016178) and of Morozumi (Re 33882) in view of Kadota et al (US 6031512).

Regarding Claim 3,6.

Kataoka et al and Morozumi discloses everything as disclosed above.

Kataoka et al and Morozumi does not disclose an inorganic insulating layer disposed between the color filters and the thin film transistors.

Kadota et al discloses (Figure 1) an inorganic insulating layer (5) disposed between the color filters (8,9,10) and the thin film transistors (TFT, 3) thereby providing the pixel electrode to electrically connect through the insulating layer to connect to the drain region (Column 1, rows 25-35).

It would have been obvious to one of ordinary skill in the art to modify Kataoka et al and Morozumi to include Kadota et al's inorganic insulating layer motivated by the desire to provide the pixel electrode to electrically connect through the insulating layer to connect to the drain region (Column 1, rows 25-35).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka et al (US 6016178) and of Morozumi (Re 33882) in view of Kawase (US 6787275).

Kataoka et al and Morozumi discloses everything as disclosed above.

Kataoka et al and Morozumi do not disclose the transparent filter being made of a transparent photosensitive material or acrylic material.

Kawase discloses (Column 23,Row 18-25) the transparent filter made of a transparent photosensitive material for excellent light transmittance.

It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Kataoka et al and Morozumi to include Kawase's transparent photosensitive material to display excellent transmittance of visible light. (Column 23,Row 18-25).

Claim 7,10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka et al (US 6016178) and of Morozumi (Re 33882) in view of Sunohara et al (US 5587819).

Regarding Claim 7.

Kataoka et al and Morozumi discloses everything as disclosed above.

Kataoka et al and Morozumi do not disclose the first pixel electrode including third, fourth, and fifth pixel electrodes located under the red, green, and blue color filters.

Sunohara et al discloses in Fig. 28 the three major colors being red, blue, and green. The three colors located on top and three pixel electrodes located under it and the pixel electrodes are also arranged in a direction so the display can produce high-luminance colors (in Abstract).

It would have been obvious to one of ordinary skilled in the art to modify Kataoka et al and Morozumi to include Sunohara et al's first pixel electrode including third,

fourth, and fifth pixel electrodes located under the red, green, and blue color filters to display a high-luminance color display (abstract).

Regarding Claim 10.

Kataoka et al and Morozumi do not disclose a 2x2 matrix having the pixel electrodes arranged in sequence as claimed.

Sunohara discloses in Figure 3, a 2x2 matrix having the first row including third (first pixel) and fourth pixel electrodes (third pixel) arranged in sequence and a second row including fifth (fifth pixel) and second pixel electrodes (second pixel) arranged in sequence to provide high luminance colors.

It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Kadota et al and Morozumi to include Sunohara et al's primary colors in the arranged order to provide high luminance colors (Column 34, Rows 41-55).

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka et al (US 6016178) and of Morozumi (Re 33882) in view of Suzuki et al (US 6081309).

Kataoka et al and Morozumi discloses everything as disclosed above.

Kataoka et al and Morozumi does not disclose one of the first pixel electrodes formed on the blue one of the primary color filters has a smaller area than either of two of the first pixel electrodes formed on a red one or a green one of o the primary color filters.

Suzuki et al discloses (Fig. 4) wherein the pixel electrodes formed on the blue filter has a smaller area than the pixel electrodes formed on the red or green filters thus preventing a disturbance of color balance while retaining a high resolution and excellent color image qualities (abstract).

It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Kataoka et al and Morozumi's to include Suzuki et al's pixel electrodes formed on the blue filter has a smaller area than the pixel electrodes formed on the red or green filters thus preventing a disturbance of color balance while retaining a high resolution and excellent color image qualities (abstract).

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka et al (US 6016178) and of Morozumi (Re 33882) in view of Tanaka Tsutomu (JP 2001-296523)

Kataoka et al and Morozumi discloses everything as disclosed above.

Kataoka et al and Morozumi does not disclose the second pixel electrodes formed over a transparent filter and wherein the second pixel electrodes have a smaller area than either of two of the first pixel electrodes formed on the red or green one of the primary color filters.

Tanaka Tsutomu discloses the pixel area of the transparent filter has a smaller area than either of the red or green color filter areas. [0020-0021].

It would have been obvious to one of ordinary skill in the art to modify Kataoka et al and Morozumi to include Tanaka Tsutomu's pixel area of the transparent filter has a

smaller area than either of the red or green color filter areas motivated by the desire to raise the color reproduction and luminosity of the display [0020-0021].

Allowable Subject Matter

Claim 16-20 are objected to as being rejected by a 112 rejection, but would be allowable if Applicant overcomes the 112 rejection.

Regarding Claim 16.

Kadota et al (US 6031512) discloses in Figure 1 a first substrate (20) a plurality of gate lines (3) formed on the first substrate (20). A gate insulating layer (4) formed on the gate lines (3); a semiconductor layer (2) formed on the gate insulating layer (4); a plurality of data lines (not shown, known existence) formed on the gate insulating layer (4) and intersecting the gate lines (3) to define a plurality of pixel areas; a first protective layer (5) formed on the data lines (not shown, known existence); a plurality of red (8), green (9), blue (10) color filters formed on the first protective layer (5). A second protective layer (11) formed on the color filters (8,9,10). A plurality of pixel electrodes (1) formed on the second protective layer (11) and electrically connected (CON) to the gate lines (3) and data lines through the semiconductor layer (2). A second substrate (12) facing the first substrate (20). A common electrode (13) formed on the first substrate and a liquid crystal layer (shown between 13 and 1) interposed between the first substrate (20) and second substrate (20).

Park et al (US20020074549) (Page 5 Row [0097]) teaches the use of an Ohmic contact layer used to reduce contact resistance to provide better contact between semiconductors.

Morozumi (Re 33882) discloses (column 10, row 48-60) that the use of transparent filters are used so that the overall brightness of the display can be improved.

Tanaka Tsutomu (JP 2001-296523) discloses the white filter having an area smaller than the rest of the color filters.

The prior art does not disclose nor would it have been obvious to disclose wherein the area of the blue filter and transparent (white filter) has a smaller area than the area of the red or green filter.

Claims 17-20 depend on Claim 16, therefore are allowable.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUCY P. CHIEN whose telephone number is (571)272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lucy P Chien
Examiner
Art Unit 2871

/David Nelms/
Supervisory Patent Examiner, Art Unit 2871